

WHAT IS CLAIMED IS:

1. An image sensing apparatus comprising:
  - a plurality of apertures that receives external light from different positions;
  - 5 a plurality of image sensing units that outputs image signals obtained by independently receiving light that comes from an identical position of an object and is received via said plurality of apertures, and independently extracting predetermined color components
  - 10 for each received light; and
  - a signal processing device that forms a signal that outputs an object image by mixing the image signals output from said plurality of image sensing units, wherein upon forming the signal that outputs the
  - 15 object image, said signal processing device determines a position deviation state, which occurs between the image signals, and corrects the position deviation state by a signal process, and forms the signal that outputs the object image.
- 20 2. The apparatus according to claim 1, wherein said signal processing device determines the position deviation state based on a temperature.
3. The apparatus according to claim 1, wherein said signal processing device determines the position
- 25 deviation state based on an object distance.
4. The apparatus according to claim 3, wherein said signal processing device detects the object distance by

comparing image signals from a plurality of image sensing units which extract an identical color component of said plurality of image sensing units.

5. The apparatus according to claim 1, wherein said  
5 signal processing device determines the position deviation state in response to setting of a near-distance photographing mode.

6. An image sensing apparatus comprising:  
an image sensing element having a plurality of  
10 image sensing areas;  
a photographing optical system that forms object images on the plurality of image sensing areas via a plurality of imaging systems corresponding to the plurality of image sensing areas;

15 a temperature measuring device that detects a temperature near said image sensing element; and

a signal processing device that forms a signal that outputs an object image by mixing image signals output from the plurality of image sensing areas of  
20 said image sensing element, wherein said signal processing device corrects a position deviation between the image signals in accordance with an output from said temperature measuring device upon forming the signal that outputs the object image, and forms the  
25 signal that outputs the object image.

7. An image sensing apparatus comprising:

an image sensing element having a plurality of image sensing areas;

a photographing optical system that forms object images on the plurality of image sensing areas via a plurality of imaging systems corresponding to the

5 a signal processing device that forms a signal that outputs an object image by mixing image signals output from the plurality of image sensing areas of said image sensing element, wherein said signal processing device corrects a position deviation between the image signals in accordance with an object distance upon forming the signal that outputs the object image, and forms the signal that outputs the object image.

10 8. The apparatus according to claim 7, further comprising a distance measurement unit that detects the object distance.

9. An image sensing apparatus comprising:

20 an image sensing element having a plurality of image sensing areas;

a photographing optical system that forms object images on the plurality of image sensing areas via a plurality of imaging systems corresponding to the plurality of image sensing areas; and

25 a signal processing device that forms a signal that outputs an object image by mixing image signals output from the plurality of image sensing areas of

said image sensing element, wherein said signal processing device corrects a position deviation between the image signals in response to setting of a near-distance photographing mode upon forming the signal that outputs the object image, and forms the signal that outputs the object image.

10. An image sensing apparatus comprising:

an image sensing element having first and second image sensing areas with substantially the same size on a single plane;

a photographing optical system that respectively forms first and second object images on the first and second image sensing areas; and

a signal processing device that processes an output signal from said image sensing element,

wherein each of the first and second image sensing areas has a matrix of a plurality of pixels arranged at a pitch  $a$  in the horizontal direction and a pitch  $b$  in the vertical direction on a light-receiving surface, the first and second image sensing areas have a positional relationship in which the first and second image sensing areas are separated  $a \times h \times c$  in the horizontal direction and  $b \times c$  in the vertical direction (where  $h$  is a positive integer), said image sensing element forms first and second images which are formed to have an identical spectral distribution and have substantially the same fields of view, and said

signal processing device generates a composite image signal based on the first and second images.

11. The apparatus according to claim 10, wherein said signal processing device corrects a change in spacing  
5 between the first and second images during processing of an output signal, and forms a composite image signal based on the first and second images.

12. A method of controlling an image sensing apparatus, which comprises a plurality of apertures for  
10 receiving external light from different positions, and a plurality of image sensing units for outputting image signals obtained by independently receiving light that comes from an identical position of an object and is received via said plurality of apertures, and  
15 independently extracting predetermined color components for each received light, comprising the step of:

forming a signal that outputs an object image by mixing the image signals output from said plurality of image sensing units, upon forming the signal that  
20 outputs the object image, determining a position deviation state which occurs between the image signals and correcting the position deviation state by a signal process and forming the signal that outputs the object image.

25 13. The method according to claim 12, wherein the position deviation state is determined based on a temperature.

14. The method according to claim 12, wherein the position deviation state is determined based on an object distance.

15. The method according to claim 14, wherein the object distance is detected by comparing image signals from a plurality of image sensing units which extract an identical color component of said plurality of image sensing units.

16. The method according to claim 12, wherein the position deviation state is determined in response to setting of a near-distance photographing mode.

17. A method of controlling an image sensing apparatus, which comprises an image sensing element having a plurality of image sensing areas, a photographing optical system for forming object images on the plurality of image sensing areas via a plurality of imaging systems corresponding to the plurality of image sensing areas, and a temperature measuring device for detecting a temperature near said image sensing element, comprising the step of:

forming a signal that outputs an object image by mixing image signals output from the plurality of image sensing areas of said image sensing element, and correcting a position deviation between the image signals in accordance with an output from said temperature measuring device upon forming the signal

that outputs the object image and forming the signal that outputs the object image.

18. A method of controlling an image sensing apparatus, which comprises an image sensing element  
5 having a plurality of image sensing areas, and a photographing optical system for forming object images on the plurality of image sensing areas via a plurality of imaging systems corresponding to the plurality of image sensing areas, comprising the step of:

10 forming a signal that outputs an object image by mixing image signals output from the plurality of image sensing areas of said image sensing element, and correcting a position deviation between the image signals in accordance with an object distance upon  
15 forming the signal that outputs the object image, and forming the signal that outputs the object image.

19. The method according to claim 18, further comprising the step of detecting the object distance.

20. A method of controlling an image sensing apparatus, which comprises an image sensing element  
20 having a plurality of image sensing areas, and a photographing optical system for forming object images on the plurality of image sensing areas via a plurality of imaging systems corresponding to the plurality of  
25 image sensing areas, comprising the step of:

forming a signal that outputs an object image by mixing image signals output from the plurality of image

sensing areas of said image sensing element, and  
correcting a position deviation between the image  
signals in response to setting of a near-distance  
photographing mode upon forming the signal that outputs

5 the object image, and forming the signal that outputs  
the object image.

21. A control program for controlling an image  
sensing apparatus, which comprises a plurality of  
apertures for receiving external light from different  
10 positions, and a plurality of image sensing units for  
outputting image signals obtained by independently  
receiving light that comes from an identical position  
of an object and is received via said plurality of  
apertures, and independently extracting predetermined  
15 color components for each received light, comprising a  
code of the step of:

forming a signal that outputs an object image by  
mixing the image signals output from said plurality of  
image sensing units, upon forming the signal that  
20 outputs the object image, determining a position  
deviation state which occurs between the image signals  
and correcting the position deviation state by a signal  
process, and forming the signal that outputs the object  
image.

25 22. The program according to claim 21, wherein the  
position deviation state is determined based on a  
temperature.



23. The program according to claim 21, wherein the position deviation state is determined based on an object distance.

24. The program according to claim 23, wherein the  
5 object distance is detected by comparing image signals from a plurality of image sensing units which extract an identical color component of said plurality of image sensing units.

25. The program according to claim 21, wherein the  
10 position deviation state is determined in response to setting of a near-distance photographing mode.

26. A control program for controlling an image  
sensing apparatus, which comprises an image sensing  
element having a plurality of image sensing areas, a  
15 photographing optical system for forming object images on the plurality of image sensing areas via a plurality of imaging systems corresponding to the plurality of image sensing areas, and a temperature measuring device for detecting a temperature near said image sensing  
20 element, comprising a code of the step of:

forming a signal that outputs an object image by  
mixing image signals output from the plurality of image  
sensing areas of said image sensing element, and  
correcting a position deviation between the image  
25 signals in accordance with an output from said  
temperature measuring device upon forming the signal

that outputs the object image, and forming the signal that outputs the object image.

27. A control program for controlling an image sensing apparatus, which comprises an image sensing element having a plurality of image sensing areas, and a photographing optical system for forming object images on the plurality of image sensing areas via a plurality of imaging systems corresponding to the plurality of image sensing areas, comprising a code of the step of:

forming a signal that outputs an object image by mixing image signals output from the plurality of image sensing areas of said image sensing element, and correcting a position deviation between the image signals in accordance with an object distance upon forming the signal that outputs the object image, and forming the signal that outputs the object image.

28. The program according to claim 27, further comprising a code of the step of detecting the object distance.

29. A control program for controlling an image sensing apparatus, which comprises an image sensing element having a plurality of image sensing areas, and a photographing optical system for forming object images on the plurality of image sensing areas via a plurality of imaging systems corresponding to the

plurality of image sensing areas, comprising a code of the step of:

forming a signal that outputs an object image by mixing image signals output from the plurality of image sensing areas of said image sensing element, and correcting a position deviation between the image signals in response to setting of a near-distance photographing mode upon forming the signal that outputs the object image, and forming the signal that outputs the object image.

30. A storage medium that computer-readably stores a control program cited in claim 21.

31. A storage medium that computer-readably stores a control program cited in claim 26.

15 32. A storage medium that computer-readably stores a control program cited in claim 27.

33. A storage medium that computer-readably stores a control program cited in claim 29.